TITLE: Method for producing cyclic imidate ester by cyclocondensation of amino alc. with nitrile

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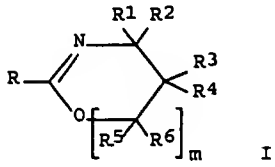

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AB Cyclic imidate esters [I; R = C1-15 alkyl (optionally substituted by C1-5 alkyl, C1-5 alkoxy, N-alkylpyrrolyl, thienyl, furyl, Ph, or substituted Ph), C7-10 bicycloalkyl (optionally substituted by C1-5 alkyl), N-alkylpyrrolyl, thienyl, furyl, Ph (optionally substituted by halo, C1-5 alkyl, or C1-5 alkoxy), halo, C1-5 alkyl, C1-5 alkoxy; m = 0,1; R1 -R6 = H, Me, Et, Pr] are prepared by cyclocondensation of nitrile RCN (R = same as above) with amino alcs. H2NCR1R2CR3R4(CR5R6)mOH (R1 - R6, m = same as above) in the presence of rhodium complex catalyst Rh[Ph2P(CH2)nPPh2]Y (n = 3-6; X = H, halo, PF6, ClO4, BF4, CF3SO3; Y = norbornadiene, cyclooctadiene, cyclooctatriene) or a combination of PhX(PPh3)3 (X = same as above) and (0.5-2)-times mol phosphine compound Ph2P(CH2)lPPh2 (l = 3,4,5). This process suppresses the formation of byproducts, economically gives in high yields products I which can be readily separated, enables the recycling of the catalysts since they are stable and do not lose the activity during distillation or the catalyst recovery process, and also easily enable to recover and recycle solvents. These cyclic imidate esters I are useful as polymer modifiers, materials for adhesives, or intermediates for drugs, agrochems., and dyes. Thus, propionitrile 14.32, 2-aminoethanol 5.3, and RhBF4[Ph2P(CH2)4PPh2](1,5-cyclooctadiene) 0.25 g was refluxed with stirring under Ar in a Schlenk tube for 5 h to give 92.5% 2-ethyl-2-oxazoline (b.p. 56-58°/100 mm Hg) according gas chromatog.

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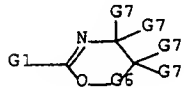

G1 = alkyl <containing 1-15 C> (opt. substd. by G2)
G2 = Ph (opt. substd. by 1 or more G4)
G4 = halo
G6 = bond